

ABSTRACT OF THE DISCLOSURE

A good interface characteristic can be maintained, and a leakage current of a dielectric film can be decreased. A semiconductor device according to one aspect of the present invention includes: a semiconductor substrate; a gate dielectric film containing at least nitrogen and a metal, the gate dielectric film being formed on the semiconductor substrate, and including a first layer region contacting the semiconductor substrate, a second layer region located at a side opposite to that of the first layer region in the gate dielectric film, and a third layer region located between the first and second layer regions, a maximum value of a nitrogen concentration in the third layer region being higher than maximum values thereof in the first and second layer regions; a gate electrode contacting the second layer region; and a pair of source and drain regions formed at both sides of the gate dielectric film in the semiconductor substrate.